DEC 8 1939
University of California

CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH
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Weekly Bulletin

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Entered as second-class matter February 21, 1922, at the post office at Sacramento, California, under the Act of August 24, 1912. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917.

Vol. XVIII, No. 43 November 18, 1939 GUY P. JONES EDITOR

Trichinosis in the Seventies

From the Second Biennial Report of the California State Board of Health, 1871-1873.

There is a suspicion that the old Jewish law forbidding the eating of unclean swine was associated with the occurrence of illness following the eating of pork. It was not until 1828, however, that the encapsulated worms in pork came under observation, and it was not until 1835 that a zoologist, named Owen, suggested the name *trichina spiralis,* for the reason that the worms resembled a coiled hair in appearance.

Many studies, chiefly experimental, into trichinosis were made during the fifties and sixties. In Germany valuable investigations were conducted and reports covering the control of the disease and the prevention of its occurrence were published. Many local outbreaks occurred in Germany, where the custom prevailed of eating raw or under-done pork, especially sausage. The high incidence of the disease in that country led to the intensive studies that were undertaken there.

Dr. Levi C. Lane of San Francisco, for whom Lane Hospital was name, and who was a member of the California State Board of Health at the time of its organization in 1870, translated from the German an article entitled "Animal Food," which was published in the second biennial report of the board, covering the years 1871 to 1873.

In this article attention was called to the danger of animal parasites to man, particularly *trichina spiralis.* It was stated, "It has not yet been fully decided what protective measures against infection from *trichinae* are best, the greatest difference of opinion being in regard to the microscopical examination of pork, which some would make obligatory, others not." The following rules, recommended as precautionary, were presented:

"1. It is desirable to spread such a knowledge of the danger of the trichina that every one will refrain from eating pork, or any of its preparations, if he is not certain that it contains no trichina, or only such as are no longer alive.

2. Those who set public tables—as in hotels, boarding houses, prisons, etc.—should be held responsible that they place on said tables no pork containing living trichina. The proprietors of such tables would then be careful to procure such meat as is thus warranted and so marked, or themselves subject it to microscopical examination, or take good care that it be sufficiently cooked.

3. We should endeavor to establish such regulations that all valueless dead animals, that may contain trichina (rats, mice, etc.), and further, all animals that are known to contain trichina, together with their excrements, hide, hair, etc., be so disposed of that other animals—swine in particular—can not become infected therefrom; and that foxes, cats, martens, and polecats, which as well as rats and mice, may become infected with trichina, be disposed of in the same way after the removal of their skins.

4. We should also seek to establish such regulations that, in so far as possible, swine be prevented from obtaining food containing trichina, viz. rats, mice,

cats, the excrement from human beings, swine or dogs, or the intestines of infected waste from swine, etc.

5. Every case of trichinosis, either in man or in swine, should be brought to the notice of the officers of public health, that its origin may be sought out and its spread prevented.

6. Meat containing living trichina, and not needed for purposes of instruction or investigation should be destroyed, or so disposed of that infection from it be prevented. Scientific studies of the trichina should be so conducted as not to become the starting point of accidental infection. The possessor of meat thus infected, should be held liable by law for any evil proceeding therefrom. The attention of the less intelligent part of the community should be drawn to this. Animals have sometimes been fed with trichinous meat as a matter of mere curiosity; the danger of this should be decidedly opposed by law.

7. We should seek to bring such influence to bear as to insure that all pork, in which there is any doubt in regard to the absence of trichina, should never be eaten uncooked, and should be so prepared for eating that any trichina present must necessarily be killed by the thorough heating of the meat. The drying or strong salting of meat, divided into small portions, also destroys trichina, but neither preparation makes a very palatable dish. According to Gerlach, heating to a temperature of over 45 degrees R., is sufficient to destroy life in the trichina. The public should also be taught that it is difficult, in the boiling or roasting of large pieces of meat, to permeate the inner part with a sufficient degree of heat, and that it is better to cut it into pieces of from half an inch to an inch in thickness, in order sufficiently to heat it. The change of color throughout, and in every part of the meat, from that of blood to that of well cooked meat, can be taken as evidence of its having been heated to a sufficient degree; the color of cooked meat results from the decomposition of the blood globules, which takes place at 65 degrees C.; hence, this color does not indicate that the meat has been heated to the boiling point.

8. What is the most suitable disposition to be made of meat infected with the trichina or of suspected material?

Where the quantity is small, it is best to burn it; larger quantities may be cut up, and then moistened with dilute sulphuric acid, and after the total destruction of the organic life, it may then be buried in heaps of compost; in still other instances it may be best to pour strong smelling petroleum upon it, and then bury it at least three or four feet deep in the earth.

Next arises the question whether the microscopic examination of the pork to be used for food shall be made obligatory by law. If only such pork be eaten as has been previously subjected to a degree of heat sufficient to destroy life in any trichinae that may be present, strictly avoiding all other, there is complete security against infection from trichinae. This would forbid the eating of raw ham and some other preparations of pork. To impress upon the mind of the public the fatal result of this disease, and the means of security against it, would seem a sufficient safeguard; but while those who live in their own homes can exercise a supervision over the proper preparation of food, the interest of those who frequent restaurants and other public tables, and of course can not rely upon the meat in question having been submitted to the required degree of heat, demands that the microscopic examination of all pork intended to be consumed by man, shall be made obligatory by law.

Against this conclusion it may be urged that it is enough to acquaint beings gifted with reason with a threatened danger, and the means requiring no great sacrifice, of protection against it, adding in certain cases a degree of legal responsibility; and that to those who then disregard such precautions, the matter shall be left as their own private interest.

But setting aside this view of the subject, and thinking of establishing as many protective regulations as possible, such measures are beset with difficulties.

Microscopic examination of pork may become a general practice by imposing a heavy fine upon those who offer for sale pork in any form, raw, smoked, or pickled, that is not warranted free from living trichina. This, however, would tend to the complicating of penal regulations in regard to meat, since justice would require distinct regulations in regard to poisonous meat and that infected with trichina, the latter being poisonous in certain cases only, while the former, that containing arsenic for example, remains poisonous, however carefully cooked. It would be easy to make the practice of microscopic examination general, the dealers themselves finding it for their interest to encourage it; but against such a general law arise two objections: First—The question whether the responsibility can, by right, be laid upon the dealer who but offers his goods for sale without guarantee. The public hold in their own hands the means of destroying all source of danger; why then render the dealer accountable? Secondly, such a law would make it the duty of the Government to provide for the most careful examination of meat, and this in all places and at all times. In cities and large towns this would offer no difficulty, but where the population is more sparse and scattered, the difficulties attending would be insurmountable. Thus this would be a law which on the one side is wanting in justice, and on the other is sometimes and in some places impracticable; and hence a general compulsory law imposing upon dealers microscopic examination of pork, could not properly be established.

Again, the presence of living trichinae having been detected by the microscope, the questions arise whether any distinction is to be made between a greater or less degree of infection; whether certain parts of the animal—not the normal site of the infection—may be safely used as food, and whether the individual shall suffer the loss consequent upon the condemnation of the animal, or whether he shall be reimbursed from the public treasury?"

The above quoted article represents the scientific attitude toward trichinosis in 1873 but it is none the less interesting in 1939.

TYPHOID FEVER IN SEASON

Typhoid fever cases were investigated in the following counties: Shasta, Mariposa, Fresno, Modoc, Sutter, Yuba, Madera and Merced. The case in Shasta County was in a person who had traveled about considerably during his vacation, and no definite source of infection could be found. Three cases in Fresno County occurred in a migratory workers' camp. One case in Stanislaus County was in an individual who had traveled considerably during the incubation period, making it impossible to locate the source of infection. Four Modoc County cases were in Indians, who had attended many local fairs. In one rural community, 7 out of 8 cases were in children, but there was no history of contact between cases. The incidence of typhoid fever is about normal for October, which month generally brings an increase in the number of cases reported.

PSITTACOSIS CONTROL

In Southern California 64 shell parrakeet aviaries were inspected and 189 interstate shipments were checked and approved. These shipments involved 1976 shell parrakeets and 269 larger psittacine birds.

Two shell parrakeet aviaries were tested—one was found negative and one proven infected with psittacosis. This one infected aviary was a private collection of birds to which the owner had recently added 24 shell parraketts, 30 African love birds, 6 cockatiels and 70 Lady Gould finches. The wife of the owner developed psittacosis October 3d and, as a part of the investigation, birds from the aviary were submitted and proven infected. The investigation has not been completed.

"ON-SALE" INSPECTIONS

An intensive survey of "on sale" establishments in Los Angeles was undertaken by the Bureau of Food and Drug Inspections during October. Several cases were discovered in which there was evidence of refilling bottles which had contained standard brands of alcoholic beverages. The present trend toward higher prices for imported liquors increases temptation to refill bottles that had contained imported liquors with domestic or cheap products. Each violation has been referred to the city prosecutor for hearing. Routine inspections of "on sale" establishments in San Francisco, Oakland and Sacramento were continued. Violators have been cited to appear before the district attorneys of their respective counties for hearings.

THE OPERATION OF RECREATIONAL CAMPS

Now that the summer camping season is closed it is a good time to begin preparations for the proper operation and sanitation of recreational camps in the 1940 season.

Doctor J. C. Geiger, Director of the San Francisco Department of Public Health, has prepared a booklet entitled "Suggestions Concerning the Selection, Construction and Operation of Recreational Camps."

Among the subjects discussed are: selecting and caring for the site, the water supply, disposal of fecal wastes, disposal of garbage and rubbish, the milk supply, other foods, control of flies, mosquitoes, other insects and vermin, structures for kitchens, dining rooms and sleeping quarters, artificial swimming pools and natural bathing places, and special provisions for children's camps.

Since the numbers of recreational camps in California have increased tremendously during recent years, it is highly important that local health officers give careful attention to the proper construction and operation of such camps. The responsibilities that rest upon the supervisors of recreational camps are by no means light, and the provision of every safeguard to protect the health of children in summer recreational camps is essential.

Doctor Geiger's suggestions upon this important subject are of great value to local health officers and to individuals who operate recreational camps.

DRIED FIGS INSPECTED

Inspection of dried figs in the San Joaquin Valley was continued during October. Several lots of the product were quarantined, pending proper sorting. Standard material was released and the remainder diverted for stock feed. The quality of figs in 1939 is higher and little difficulty was experienced in sorting the product to permit passing grades. The inspection program was conducted in close cooperation with the Fig Institute and the prorate organization.

MACARONI INSPECTED

Inspections of macaroni manufacturing plants in San Francisco, Oakland, San Jose, Sacramento and Santa Rosa were made during October. Samples of macaroni products, suspected of containing nonpermissible artificial coloring, were submitted to the laboratory for analysis. Samples of egg noodles also were taken in order to determine if the legal egg contents were present. More than 15,000 pounds of assorted macaroni products were destroyed because of grain weevil infestation in a single warehouse.

MORBIDITY

Complete Reports for Following Diseases for Week Ending November 11, 1939

Chickenpox

230 cases: Alameda County 1, Oakland 5, Butte County 6, Fresno County 1, Fresno 18, Bishop 5, Kern County 3, Kings County 4, Los Angeles County 20, Huntington Park 2, Long Beach 9, Los Angeles 14, Monrovia 1, Pasadena 1, Pomona 1, San Fernando 1, Torrance 1, Monterey Park 1, Madera County 2, Marin County 2, San Anselmo 2, Gustine 2, Monterey County 5, Monterey 2, Grass Valley 2, Orange County 4, Fullerton 1, Huntington Beach 1, Santa Ana 2, Riverside 6, Indio 2, Sacramento 6, Colton 1, San Diego County 3, San Diego 4, San Francisco 24, San Joaquin County 1, Stockton 4, San Luis Obispo County 10, Redwood City 2, Belmont 1, Santa Clara County 2, Mountain View 1, San Jose 7, Shasta County 3, Sierra County 2, Solano County 1, Stanislaus County 17, Newman 4, Sutter County 3, Tulare County 5, Santa Paula 1, Ojai 1.

Diphtheria

40 cases: Kings County 1, Los Angeles County 1, Arcadia 1, Los Angeles 7, Pasadena 1, Madera County 2, Elsinore 5, Sacramento 1, San Diego County 15, San Diego 2, San Francisco 1, Stockton 2, Santa Maria 1.

German Measles

17 cases: Berkeley 2, Kings County 1, Los Angeles County 3, Los Angeles 3, Pasadena 2, Huntington Beach 2, Santa Ana 1, San Diego County 1, San Diego 1, Petaluma 1.

Influenza

12 cases: Kern County 4, Los Angeles 4, Bell 1, Sacramento 1, San Francisco 1, San Jose 1.

Malaria

3 cases: Fresno County 1, Grass Valley 1, Winters 1.

Measles

140 cases: Berkeley 1, Oakland 1, Fresno 1, Los Angeles County 2, Long Beach 1, Los Angeles 8, San Fernando 10, Ukiah 1, Napa 1, Fullerton 1, Sacramento 1, San Diego County 3, National City 24, San Diego 28, San Francisco 3, Stockton 3, Daly City 1, Stanislaus County 1, Tulare County 47, Ventura County 1, Ventura 1.

Mumps

207 cases: Alameda County 2, Berkeley 2, Colusa County 1, Richmond 3, Fresno County 2, Kern County 4, Lake County 1, Los Angeles County 10, Alhambra 1, Glendale 1, Long Beach 8, Los Angeles 16, Monrovia 1, Pasadena 1, Pomona 1, South Pasadena 1, Whittier 1, Torrance 1, Madera 2, Mill Valley 26, San Anselmo 1, Merced 2, Orange County 5, Anaheim 8, Banning 3, Beaumont 1, Sacramento 1, Redlands 2, San Diego 3, San Francisco 13, Stockton 5, Hillsborough 3, San Bruno 1, San Mateo 7, Atherton 1, Menlo Park 1, Santa Barbara County 3, Santa Maria 3, Santa Clara County 2, Mountain View 3, Palo Alto 12, Solano County 1, Benicia 1, Stanislaus County 2, Turlock 1, Sutter County 3, Tulare County 18, Ojai 1, Yolo County 1, Davis 12, Yuba County 2.

Pneumonia (Lobar)

21 cases: Alameda 1, Oakland 3, Fresno County 2, Inyo County 1, Kern County 2, Glendale 1, Los Angeles 4, Sacramento 1, San Diego County 1, San Francisco 2, San Jose 1, Yuba County 1, Marysville 1.

Scarlet Fever

148 cases: Alameda County 1, Butte County 1, Contra Costa County 2, Richmond 10, Fresno County 3, Fresno 1, Inyo County 1, Kern County 5, Kings County 1, Los Angeles County 13, Burbank 2, Glendale 9, Long Beach 1, Los Angeles 25, San Fernando 1, South Gate 1, Monterey Park 2, Marin County 1, Mill Valley 1, Mendocino County 2, Fort Bragg 2, Napa County 2, Orange County 3, Placer County 6, Riverside County 2, Sacramento 2, San Benito County 1, Ontario 1, San Diego County 3, La Mesa 1, San Diego 7, San Francisco 4, San Joaquin County 3, Stockton 1, San Luis Obispo 1, Burlingame 1, Redwood City 1, South San Francisco 1, Santa Barbara 1, Santa Clara County 5, San Jose 1, Shasta County 1, Solano County 1, Sonoma County 2, Stanislaus County 4, Sutter County 1, Tulare County 2, Tuolumne County 1, Ventura County 2, Oxnard 1, Ventura 1.

Smallpox

No cases reported.

Typhoid Fever

29 cases: Fresno County 1, Los Angeles County 1, Los Angeles 20, Pasadena 4, Plumas County 1, Stanislaus County 1, Tulare County 1.

Whooping Cough

63 cases: Berkeley 2, Chico 1, El Cerrito 1, Kern County 4, Los Angeles County 6, Burbank 1, Claremont 1, Glendale 1, Long Beach 2, Los Angeles 11, Orange 2, San Diego 1, San Francisco 6, San Luis Obispo 1, San Mateo County 3, Redwood City 1, Belmont 2, Palo Alto 3, San Jose 4, Petaluma 5, Tulare County 4, Yuba County 1.

Meningitis (Epidemic)

One case: San Francisco.

Dysentery (Amoebic)

5 cases: Berkeley 1, Glendale 1, San Mateo 1, Santa Clara County 1, Stanislaus County 1.

Dysentery (Bacillary)

12 cases: Los Angeles County 1, Los Angeles 3, Pasadena 1, Whittier 1, Ukiah 1, San Diego 1, San Francisco 2, Sonoma County 1, Modesto 1.

Poliomyelitis

23 cases: Oakland 4, Calaveras County 1, Fresno 1, Kern County 4, Bakersfield 1, Santa Monica 1, Marin County 1, Sacramento County 1, Sacramento 2, San Francisco 1, Palo Alto 2, San Jose 1, Stanislaus County 1, Sutter County 1, Tulare County 1.

Tetanus

One case: Maywood.

Trachoma

5 cases: Long Beach 1, Indio 4.

Encephalitis (Epidemic)

One case: Butte County.

Hookworm

One case: San Francisco.

Paratyphoid Fever

2 cases: Los Angeles County 1, Santa Clara County 1.

Typhus Fever

One case: Los Angeles.

Botulism

One case: Kings County.

Jaundice (Epidemic)

36 cases: Modoc County 2, Shasta County 33, Redding 1.

Undulant Fever

4 cases: Berkeley 1, San Diego 1, Tuolumne County 1, Davis 1.

Septic Sore Throat

2 cases: Lake County 1, Benicia 1.

Relapsing Fever

One case: Calaveras County.

Rabies (Animal)

3 cases: Long Beach 1, Los Angeles 1, Daly City 1.

SATURDAY AND SUNDAY CLAIM MOST MOTOR DEATHS

The United States Bureau of the Census has released data pertaining to motor vehicle deaths in California in 1938. Out of 2784 such deaths registered last year, distribution by days of the week is as follows:

Sunday	595	Thursday	256
Monday	386	Friday	382
Tuesday	309	Saturday	509
Wednesday	335	Unknown	12

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printed in CALIFORNIA STATE PRINTING OFFICE
SACRAMENTO: GEORGE H. MOORE, STATE PRINTER